

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
25 August 2005 (25.08.2005)

PCT

(10) International Publication Number  
**WO 2005/078438 A2**

(51) International Patent Classification<sup>7</sup>: **G01N 33/533**

(21) International Application Number:  
PCT/FI2005/050028

(22) International Filing Date: 11 February 2005 (11.02.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/544,197 13 February 2004 (13.02.2004) US  
20040236 13 February 2004 (13.02.2004) FI

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT,

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(54) Title: USE OF TWO-PHOTON EXCITED FLUORESCENCE IN ASSAYS OF CLINICAL CHEMISTRY ANALYTES

(57) Abstract: The invention relates to an in vitro diagnostic method for quantification of a clinical chemistry analyte from a clinical sample wherein the clinical chemistry analyte undergoes a chemical reaction or reactions with a reagent or reagents in one or 5 several steps, or in a reaction sequence, or catalyses a chemical reaction, or reactions, or a reaction in a reaction sequence of a reagent or reagents, in one or several steps, in a reaction system. The reaction or reactions or reaction sequence result in a change of a measurable property of a compound or compounds of said reaction or reactions or reaction sequence. Characteristic for the method is that said chemical reaction or reactions or reaction sequence results in formation of a two-photon fluorescent compound, or a change in two-photon fluorescence properties of the reaction system comprising at least one two-photon fluorescent compound, and the analyte is quantified by exciting said two-photon fluorescent compound or compounds and measuring two-photon excited fluorescence, and relating said measured fluorescence to method standardization data based on measurements obtained from reference material of said analyte. The present invention also relates to use of a fluorometric device employing two-photon fluorescence excitation for quantification of a clinical chemistry analytes. The present invention further relates to a system for quantification of clinical chemistry analytes from samples containing the analyte. Characteristic for the system is that it comprises a fluorometric device employing two-photon excited fluorescence for quantifying one or several clinical chemistry analytes, and a data processing unit with software for dedicated data reduction for quantification of the analyte or analytes using said fluorometric device. The present invention further relates to a software product for the system.



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- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations

**Published:**

- without international search report and to be republished upon receipt of that report

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